CLAIMS

1. Substantially pure growth differentiation factor-12 (GDF-12) and functional fragments thereof.

2. An isolated polynucleotide sequence encoding the GDF-12 polypeptide of claim 1.

3. The polynucleotide of claim 2, wherein the GDF-12 is selected from the group consisting of:
   a. SEQ ID NO:13, wherein T can also be U;
   b. nucleic acid sequences complementary to SEQ ID NO:13; and
   c. fragments of a. or b. that are at least 15 bases in length and that will selectively hybridize to DNA which encodes the GDF-12 protein of SEQ ID NO:14; and

4. The polynucleotide of claim 2, wherein the polynucleotide is isolated from a mammalian cell.

5. The polynucleotide of claim 4, wherein the mammalian cell is selected from the group consisting of mouse, rat, and human cell.

6. An expression vector including the polynucleotide of claim 2.

7. The vector of claim 6, wherein the vector is a plasmid.

8. The vector of claim 6, wherein the vector is a virus.

9. A host cell stably transformed with the vector of claim 6.

10. The host cell of claim 9, wherein the cell is prokaryotic.

11. The host cell of claim 9, wherein the cell is eukaryotic.

12. Antibodies that bind to the polypeptide of claim 1 or fragments thereof.

13. The antibodies of claim 12, wherein the antibodies are polyclonal.

14. The antibodies of claim 12, wherein the antibodies are monoclonal.

15. A method of detecting a cell proliferative disorder comprising contacting the antibody of claim 12 with a specimen of a subject suspected of having a GDF-12 associated disorder and detecting binding of the antibody.

16. The method of claim 15, wherein the cell is a liver cell.

17. The method of claim 15, wherein the detecting is *in vivo*.

18. The method of claim 17, wherein the antibody is detectably labeled.

19. The method of claim 18, wherein the detectable label is selected from the group consisting of a radioisotope, a fluorescent compound, a bioluminescent compound and a chemiluminescent compound.

20. The method of claim 15, wherein the detection is *in vitro*.

21. The method of claim 20, wherein the antibody is detectably labeled.

22. The method of claim 21, wherein the label is selected from the group consisting of a radioisotope, a fluorescent compound, a bioluminescent compound, a chemoluminescent compound and an enzyme.

23. A method of treating a cell proliferative disorder associated with expression of GDF-12, comprising contacting the cells with a reagent which suppresses the GDF-12 activity.

24. The method of claim 23, wherein the reagent is an anti-GDF-12 antibody.

25. The method of claim 23, wherein the reagent is a GDF-12 antisense sequence.

26. The method of claim 23, wherein the cell is a liver cell.

27. The method of claim 23, wherein the reagent which suppresses GDF-12 activity is introduced to a cell using a vector.

28. The method of claim 27, wherein the vector is a colloidal dispersion system.

29. The method of claim 28, wherein the colloidal dispersion system is a liposome.

30. The method of claim 29, wherein the liposome is essentially target specific.

31. The method of claim 30, wherein the liposome is anatomically targeted.

32. The method of claim 31, wherein the liposome is mechanistically targeted.

33. The method of claim 32, wherein the mechanistic targeting is passive.

34. The method of claim 32, wherein the mechanistic targeting is active.

35. The method of claim 34, wherein the liposome is actively targeted by coupling with a moiety selected from the group consisting of a sugar, a glycolipid, and a protein.

36. The method of claim 35, wherein the protein moiety is an antibody.

37. The method of claim 36, wherein the vector is a virus.

38. The method of claim 37, wherein the virus is an RNA virus.

39. The method of claim 38, wherein the RNA virus is a retrovirus.

40. The method of claim 39, wherein the retrovirus is essentially target specific.

41. The method of claim 40, wherein a moiety for target specificity is encoded by a polynucleotide inserted into the retroviral genome.

42. The method of claim 40, wherein a moiety for target specificity is selected from the group consisting of a sugar, a glycolipid, and a protein.

43. The method of claim 42, wherein the protein is an antibody.

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